

National Phase of PCT/GB00/03528  
Preliminary Amendment

---

52. A lineariser according to Claim 51, wherein the modifier comprises a squarer for squaring the extracted signal.

53. A lineariser according to Claim 51, wherein the combiner comprises a mixer for mixing the distortion signal into the input signal.

*u* ~~54.~~ A lineariser according to Claim 51, wherein the generator comprises a data store, wherein the data store is addressed by values of the delivered signal to responsively output corresponding values for the distortion signal.

55. A lineariser according to Claim 51, wherein the generator is arranged to generate a number of distortion components which are susceptible of independent control.

56. A lineariser according to Claim 55, wherein the generator comprises a splitter for splitting at least one distortion component into orthogonal components, each orthogonal component being susceptible of independent control.

57. A lineariser according to Claim 51, wherein the generator is arranged to combine a dc signal with the distortion signal.

National Phase of PCT/GB00/03528  
Preliminary Amendment

---

58. A lineariser according to Claim 51, wherein the generator produces a number of components and further comprises an adjuster for removing lower order components appearing in at least one of the components.

59. A lineariser according to Claim 53, wherein the mixer comprises a splitter for splitting the input signal into orthogonal components.

60. A lineariser according to Claim 59, wherein the mixer mixes the distortion signal into one of the orthogonal input signal components.

61. A lineariser according to Claim 59, wherein the mixer mixes a dc component into one of the orthogonal input signal components.

62. A lineariser according to Claim 59, wherein the distortion signal comprises two orthogonal components and the mixer mixes each orthogonal signal component into a respective input signal component.

National Phase of PCT/GB00/03528  
Preliminary Amendment

---

63. A lineariser according to Claim 61, further comprising a signal conditioner for conditioning the signal input to the generator so that the signal input maintains a substantially constant amplitude.

64. A lineariser according to Claim 51, further comprising a controller for adjusting a parameter of the distortion signal on the basis of feedback signal derived from the output signal.

65. A lineariser according to Claim 64, wherein the distortion signal comprises a number of components and the controller is capable of exerting independent control over at least one of them.

66. A lineariser according to Claim 64, wherein the controller generates at least one non-linear component of the signal input to the generator for correlation with the feedback signal to produce signals to control parameters of the distortion signal or components thereof.

67. A lineariser according to Claim 64, wherein the controller divides the signal input to the generator into components and correlates them with the feedback signal to produce signals to control parameters of the distortion signal or components thereof.

National Phase of PCT/GB00/03528  
Preliminary Amendment

---

68. A lineariser according to Claim 64, wherein the controller divides the signal input to the generator into components and determines their amplitude in order to produce signals to control parameters of the distortion signal or components thereof.

69. A lineariser according to Claim 51, wherein the signal handling equipment comprises an amplifier.

70. A lineariser for reducing distortion of the output signal which signal handling equipment produces in response to an analogue RF input signal, the lineariser comprising an extractor for extracting a portion of the input signal, a generator for generating digitally a distortion signal from a delivered signal which is the extracted signal and a mixer for mixing the distortion signal into the input signal.

71. A lineariser according to Claim 70, wherein the generator comprises a data store, wherein the data store is addressed by values of the delivered signal to responsively output corresponding values for the distortion signal.

National Phase of PCT/GB00/03528  
Preliminary Amendment

---

✓ 72. A lineariser according to Claim 70, wherein the generator is arranged to generate a number of distortion components which are susceptible of independent control

✓ 73. A lineariser according to Claim 72, wherein the generator comprises a splitter for splitting at least one distortion component into orthogonal components, each orthogonal component being susceptible of independent control.

✓ 74. A lineariser according to Claim 70, wherein the generator is arranged to combine a dc signal with the distortion signal.

75. A lineariser according to Claim 70, wherein the generator produces a number of components and further comprises an adjuster for removing lower order components appearing in at least one of the components.

✓ 76. A lineariser according to Claim 70, wherein the mixer comprises a splitter for splitting the input signal into orthogonal components.

✓ 77. A lineariser according to Claim 76, wherein the mixer mixes the distortion signal into one of the orthogonal input signal components.

National Phase of PCT/GB00/03528  
Preliminary Amendment

---

78. A lineariser according to Claim 76, wherein the mixer mixes a dc component into one of the orthogonal input signal components.

79. A lineariser according to Claim 76, wherein the distortion signal comprises two orthogonal components and the mixer mixes each orthogonal signal component into a respective input signal component.

80. A lineariser according to Claim 76, further comprising a signal conditioner for conditioning the signal input to the generator so that the signal input maintains a substantially constant amplitude.

81. A lineariser according to Claim 76, further comprises a controller for adjusting a parameter of the distortion signal on the basis of a feedback signal derived from the output signal.

82. A lineariser according to Claim 81, wherein the distortion signal comprises a number of components and the controller is capable of exerting independent control over at least one of them.

National Phase of PCT/GB00/03528  
Preliminary Amendment

---

83. A lineariser according to Claim 81, wherein the controller generates at least one non-linear component of the signal input to the generator for correlation with the feedback signal to produce signals to control parameters of the distortion signal or components thereof.

84. A lineariser according to Claim 81, wherein the controller divides the signal input to the generator into components and correlates them with the feedback signal to produce signals to control parameters of the distortion signal or components thereof.

85. A lineariser according to Claim 81, wherein the controller divides the signal input to the generator into components and determines their amplitude in order to produce signals to control parameters of the distortion signal or components thereof.

86. A lineariser according to Claim 70, wherein the signal handling equipment comprises an amplifier.

87. A lineariser for reducing distortion of the output signal which signal handling equipment produces in response to an analogue RF input signal, the lineariser comprising an extractor for extracting a portion of the input signal, a generator for generating a distortion signal from a delivered signal which is the extracted

National Phase of PCT/GB00/03528  
Preliminary Amendment

---

signal and a mixer for mixing the distortion signal into the input signal in a quadrature mixing process.

88. A lineariser for reducing distortion of the output signal which signal handling equipment produces in response to an input signal, the lineariser comprising an extractor for extracting a portion of the input signal, a modifier for modifying the extracted signal to create non-linear components of reduced frequency therein, a generator for generating digitally a distortion signal from a delivered signal which is the modified signal and a mixer for mixing the distortion signal into the input signal in a quadrature mixing process.

89. A method of reducing distortion of the output signal which signal handling equipment produces in response to an input signal, the method comprising extracting a portion of the input signal, modifying the extracted signal to create non-linear components of reduced frequency therein, generating digitally a distortion signal from a delivered signal which is the modified signal and combining the distortion signal with the input signal.

90. A method of reducing distortion of the output signal which signal handling equipment produces in response to an analogue RF input signal, the method comprising extracting a portion of the input signal, generating digitally a distortion signal

National Phase of PCT/GB00/03528  
Preliminary Amendment

---

*an*  
from a delivered signal which is the extracted signal and mixing the distortion signal into the input signal.

---